



DVL SERIES

DIGITAL STUDIO TRANSMITTER LINK



GENERAL DESCRIPTION

The **DVL Series Digital Television Links** are designed to operate in the 10380 MHz to 11580 MHz range to transfer multiple high quality digital Video and Audio programs in the same user-defined RF channel bandwidth.

Ultra low phase noise oscillators and a powerful linearity pre-corrector allow minimizing the Bit Error Rate (BER) also using the maximum spectrum efficiency modulation systems (BPSK, QPSK, 8PSK or QAM).

Bit-rate programmability. The digital modulators and demodulators have a fully programmable bit rate allocation for each program to widely define the quality and bandwidth of the modulation: this to guarantee the maximum flexibility in all applications.

Indoor & Outdoor. The UC & DC Series microwave up & down-converters are available in indoor or outdoor waterproof version for rear parabola mounting facility.

Analog or digital. All the UC & DC Series microwave up & down converters are suitable for digital or analog operation, with full compatibility with existing analog IF modulators & demodulators. They are available with different IF frequency on request.

Full metering, control, setting and system diagnostic is available on the front panel.

Digital networks compatibility. The DVL links are suitable for being integrated in any analog or digital network with easy and direct connection to satellite digital receivers and terrestrial digital or analog broadcasting transmitters.

POINT TO POINT DIGITAL MICROWAVE LINK CONFIGURATION

Generals. The new ONAIR Digital Video Microwave Links allow a top quality Video and Audio connection with possibility of multichannel configuration for a very spectrum efficient and cost effective solution.

The full system is easily user configurable to optimize the RF band efficiency and the Video and Audio characteristics for each application (contribution links, distribution links, mobile digital links, etc...).

To compose a digital microwave link you need to use the following equipments:

- An IF Modulator/Encoder (DVL-IF series with 1, 2, 3 or 4 Video channels capacity and 2, 4, 6, 8 Audio channels capacity)
- An IF to Channel microwave up-converter/amplifier with an output power suitable for the link connection (UC series UP Converter)
- A Channel to IF microwave down-converter/preamplifier (DC Down Converter)
- An IF Receiver/Decoder (DVL-Rx series with 1,2,3,4 Video channels capacity and 2,4,6,8 Audio channels capacity)
- 2 antennas properly dimensioned for the link coverage distance

See a block diagram for a 4 video + 8 audio programs link:



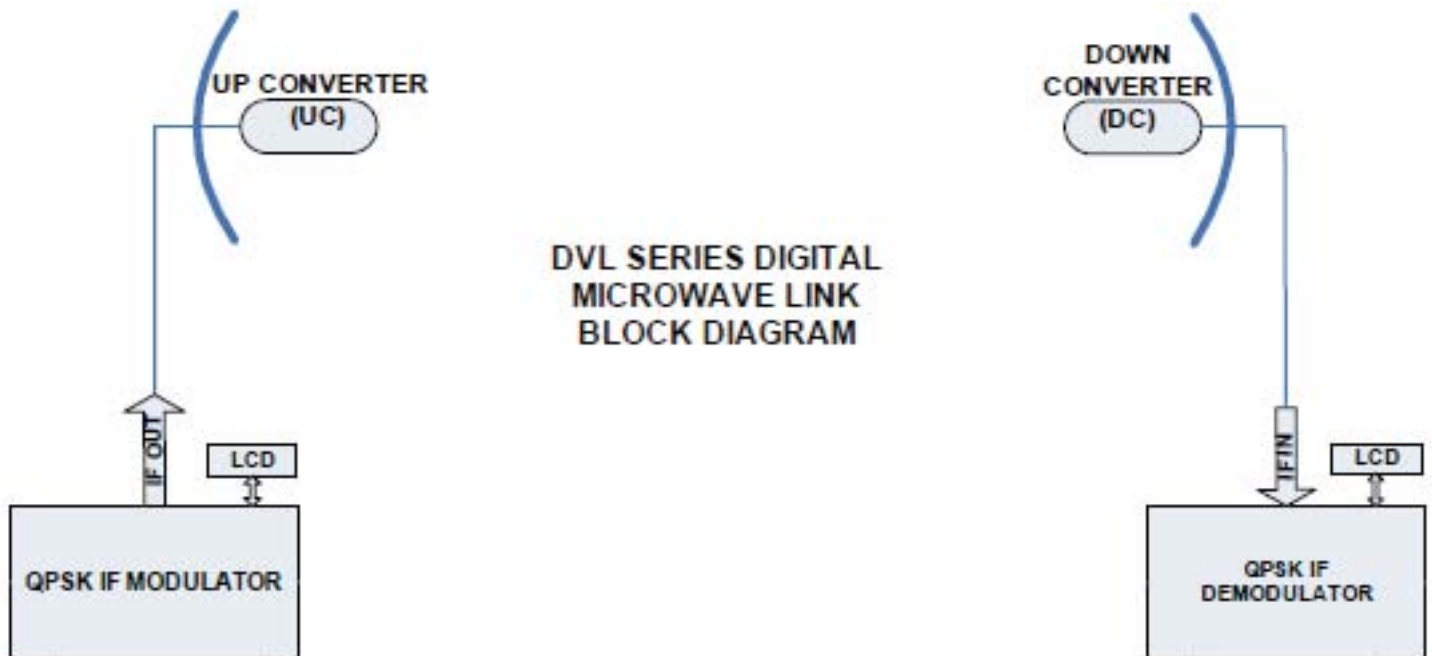
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GENERAL TECHNICAL FEATURES

- Complete solution for TV&FM Radio link requirements
- Consisting Encoder, Decoder, Tx&Rx Antennas and installation accessories
- Operating Frequency from 10380 to 11580 MHz
- Accepts up to 4 Video + 8 Audio Channels*
- Output Power
 - DVLX/01/XX: 100 mW
 - DVLX/1/XX: 1 W
- Add / Modify Tables (NIT, SDT...)
- Automatic Bit Rate Adaptation
- Forward Error Correction (RS 188/204; code rates 1/2 to 7/8; convolutional interleaving)
- Symbol Rate up to 20MS/s
- Tuning 1 kHz step
- Compliant to ETS300421 (DVB-S)

* To include more than 4 Video and 8 Audio programs is possible to use external multiplexers and demultiplexers for very high capacity networks.





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TRANSMITTER SECTION DVL/IF/XX

Technical Parameters

RF SPECIFICATIONS	IF Frequency Range	730-1930MHz
	IF Level	0-15 dBm
	Connector	F Type
	Video Input	CVBS, YC (S-Video)
	Video Input Connector	RCA for CVBS , 4 Pin mini-DIN for S-Video
	Video Input Level	1Vp-p
	Impedance	75 Ohm
	Video format	PAL/NTSC/SECAM
	Selectable Encoding Bit Rate	4:2:0 1.5 to 15Mbps
	Audio Input Connector	RCA
AUDIO INPUT	Audio Input Connector	2xRCA
	Audio Input Level	+10dBm max
	Impedance	> 100kOhm, Unbalanced
	Audio Frequency Interval	25 Hz-15 KHz
	Audio Frequency Response	+/-0,5 dB max.
	Operating Modes	Stereo, Joint Stereo, Dual channel and Mono
	Sampling Frequencies	32kHz, 48kHz, 56kHz, 64kHz, 80kHz, 96kHz, 112kHz 128kHz, 160kHz, 192kHz, 224kHz, 256kHz, 320kHz, 384kHz
MODULATOR	Modulation	QPSK
	Inner FEC Code Rates	1/2, 2/3, 3/4, 5/6 and 7/8
	Outer Code	188/204 Reed Solomon
	Modulation Error Rate	>25 dB
	Symbol Rate	1-45 Msymbol/s in 1 kSymbol-steps
	Programming Resolution	1 Baud
	Frequency	70 - 482 MHz
	Return Loss	>10 dB
	Spurious	>-60dBc/4kHz
Connector	F-type in KU band	
POWER	Line Input Voltage Range	185-265 VAC
	Line Frequency	50 Hz +/-%10
ENVIRONMENTAL	Temperature Range	15°C to 50°C
	Humidity	% 30-80

RECEIVER SECTION DVL/Rx/XX

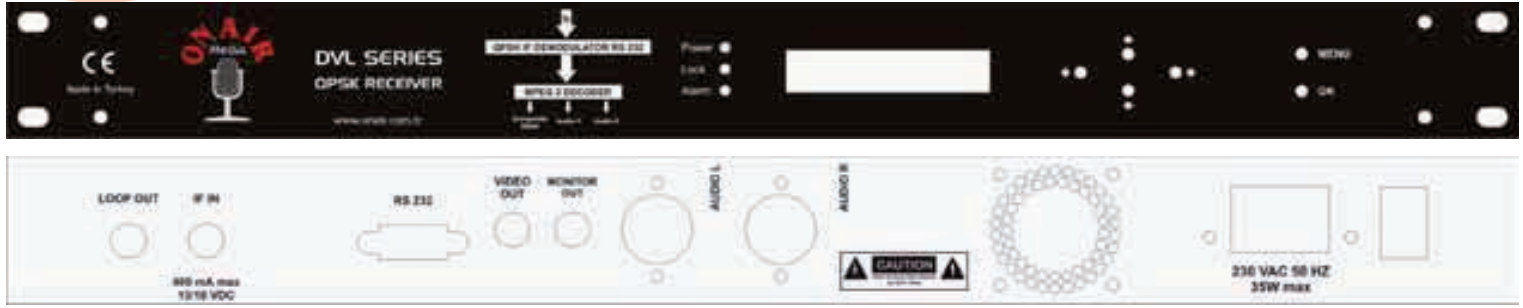
Technical Parameters

GENERAL SPECIFICATION	LCD display (2x16 characters)
	Front Panel Keypad / Keypad lock
	Selectable BER value / signal strength display
	Automatic FEC detection, carrier tracking, power-on reset
	LED indicators (Power, Lock, Alarm)
	Optional BISS decoding
	C- / KU band reception
	Dynamic PMT feature
	Optional DVB Subtitle feature
	PAL, SECAM and NTSC systems



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RF CHARACTERISTICS	Input Level	-25 dBm to -65 dBm
	Input Frequency	950-2150 MHz
	Modulation	QPSK
	Symbol Rate	1-45 M symbols/sec (M bauds)
	FEC Coding	1/2, 2/3, 3/4, 5/6, 7/ automatic selection
	Input Impedance	75 Ω
	LNB Power Supply	13/18 V polarity switching, plus 22 kHz
	LNB Current	400 mA, short circuit protected
	Input Connector	F- type, female
	Loop Out Connector	F- type, female
VIDEO COMPRESSION	Data Rate	1.5 – 15 Mbps
	Compression Type	MPEG-2, 4:2:0
	Video Format	04:03
VIDEO OUTPUT	Video Format	Composite PAL/NTSC/SECAM
	Output Level	1 Vpp menu adjustable
	Output Impedance	75 Ohm
	Chroma- Luma Gain	< 5 %
	Chroma- Luma Delay	< 25 ns
	Luminance non-linearity	< 4 %
	Connector type	BNC, female
	Monitor output	BNC, female
AUDIO COMPRESSION	Compression Type:	MPEG-1 Layer-I, II
	Output Modes	Stereo, Dual Mono, Mono
	Sampling Rate	32, 44.1 and 48 kHz
AUDIO OUTPUTS	Frequency range	16Hz-22 kHz
DVL10-UP CONVERTER TECHNICAL SPECIFICATIONS	Local Oscillator Frequency: 9650MHz	
	Input Level: 0 to -40 dBm (0.5 to 1 mW)	
	Output Level: +12dBm (15mW in DVB-S)	
	NOTE: The frequency of the microwave link is set between 9650+730=10380MHz and 9650+1930=11580MHz	
DVL10-DOWN CONVERTER TECHNICAL SPECIFICATIONS:	Local Oscillator Frequency	9430MHz
	IF Frequency Range	950-2150MHz
PARABOLIC ANTENNA SPECIFICATIONS	Size	44 cm flat ; 90 cm parabol
	Gain	27dB (44cm), 40dB (90cm)
ORDER CODES	DVL10/01/12 10 GHz Digital Video Link, 1 Video+2 Audio, 0.1 W Output, Parabolic Antenna	
	DVL10/01/24 10 GHz Digital Video Link, 2 Video+4 Audio, 0.1 W Output, Parabolic Antenna	
	DVL10/01/LR 10 GHz Digital Audio Link, 2 Audio, 0.1 W Output, Parabolic, Antenna	
	DVL10/01/2LR 10 GHz Digital Audio Link, 4 Audio, 0.1 W Output, Parabolic, Antenna	
	DVL10/1/12 10 GHz Digital Video Link, 1 Video+2 Audio, 1 W Output, Parabolic Antenna	
	DVL10/1/24 10 GHz Digital Video Link, 2 Video+4 Audio, 1 W Output, Parabolic Antenna	
	DVL10/1/LR 10 GHz Digital Audio Link, 2 Audio, 1 W Output, Parabolic Antenna	
	DVL10/1/2LR 10 GHz Digital Audio Link, 4 Audio, 1 W Output, Parabolic Antenna	